

APPENDIX D

GLOSSARY

Air Quality Investment Program (AQIP): An emission reduction option in which monies collected by the AQMD from affected facilities are used to fund emission reduction programs that have been approved by the AQMD Governing Board.

Census of Population: The U.S. Constitution provides for a census of the population every 10 years. The 2000 census includes information on population, household, housing, race and ethnicity, economy, and education.

Acute Health Effect: An adverse health effect that occurs over a relatively short period of time (e.g., minutes or hours).

Acute Respiratory Symptoms: Any respiratory disease-related symptoms including chest discomfort, coughing, wheezing, sore throat, head cold, chest cold, sinus trouble, hay fever, headache and doctor-diagnosed flu.

Air Quality Simulation Model: A computer program that simulates the transport, dispersion, and transformation of compounds emitted into the air and can project the relationship between emissions and air quality.

Ambient Air: The air occurring at a particular time and place outside of structures. Often used interchangeably with “outdoor” air.

APCD (Air Pollution Control District): A county agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors. (cf. AQMD).

AQMD (Air Quality Management District): A group or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air pollution control board comprised mostly of elected officials from within the region. (cf. APCD).

AQMP (Air Quality Management Plan): A Plan prepared by an APCD/AQMD, for a county or region designated as a non-attainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California Ambient Air Quality Standards. AQMPs are incorporated into the State Implementation Plan (SIP).

ARB (California Air Resources Board): The State's lead air quality agency consisting of a nine-member Governor-appointed board. It is responsible for attainment and maintenance of the State and federal air quality standards, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

Asthma Symptom Days: Days in which asthma symptoms are present in asthmatic individuals.

BenMAP Model (Environmental Benefits Mapping and Analysis Program): A computer model designed to estimate general population exposures to air pollutants. The model uses air quality data from the CAMx Model as inputs for exposure calculations. The model is structured in a manner that allows for consideration of spatial and temporal variations in concentrations, the variations in human time activity, and the mobility of the population

CAA (Federal Clean Air Act): A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

CAMx (Comprehensive Air Quality Model with Extensions): The three dimensional photochemical grid model used to simulate ozone and PM_{2.5} formation.

Cardiac Hospital Admissions: Hospital admissions due to heart-related ailments or disease.

CCAA (California Clean Air Act): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local APCDs/AQMDs in violation of the CAAQS must prepare attainment plans which identify air quality problems, causes, trends, and the actions to be taken to attain and maintain California's air quality standards by the earliest practicable date.

CEQA (California Environmental Quality Act): A California law which sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision makers to determine whether any environmental impacts are associated with a proposed project. It requires environmental impacts associated with a proposed project to be identified, disclosed, and mitigated to the maximum extent feasible.

Clean Air Benefits: These are reduced morbidity, avoided mortality, visibility improvements, increased crop yield, traffic congestion relief, reduced spending on refurbishing sensitive building materials, and less damage to plant life and livestock resulting from attaining federal and state air quality standards.

CO (Carbon Monoxide): A colorless, odorless gas resulting from the incomplete combustion of fossil fuels. Over 80% of the CO emitted in urban areas is contributed by motor vehicles. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant.

Concentration-Response Function: A mathematical relationship derived to calculate the number of cases of a specific health effect expected in a population exposed to a given ambient concentration of an air pollutant.

Chronic Bronchitis: Chronic lung disease characterized by frequent coughing, increased sputum production, and interference with oxygen exchange between air and blood in the lungs of severely affected individuals.

Chronic Health Effect: An adverse health effect which occurs over a relatively long period of time (e.g., months or years).

Consumer Expenditure Survey (CES): The CES collects information on the buying habits of American consumers. The survey consists of two components: (1) a Diary survey completed by participating consumers for two consecutive 1-week periods; and (2) an Interview survey in which the expenditures of consumers are obtained in five interviews

conducted every 3 months. Each component of the survey queries an independent sample of consumers which is representative of the U.S. population. Over 52 weeks of the year, 5,000 consumers are sampled for the Diary survey. The Interview sample is selected on a rotating panel basis, targeted at 5,000 consumers each quarter.

Current Population Survey (CPS): The CPS provides monthly statistics that serve as measures of both current labor force utilization and the overall performance of the U.S. economy. The information collected from a sample of 60,000 households in the CPS relates to the employment status of the entire population. For the employed, there are data on hours worked, providing information on the full-time and part-time status of workers, and on their usual weekly earnings. For the unemployed, data routinely are collected on duration of unemployment, the respondent's job status at the time that his or her jobless spell began, and job seeking methods used. Among those not in the labor force, data are obtained for so-called discouraged workers, who have ceased active job hunting.

Discounted Cash Flow Method: A method to evaluate the present worth of a stream of expenditures in future years. Future expenditures are discounted based on the interest rate and the length of the period in which the expenditures are made.

Disposable Income: It is the sum of the incomes of all the individuals in the economy after all taxes have been deducted.

Dose-Response Function: A mathematical relationship which expresses the likelihood of a connection between exposure to a specific amount of an air pollutant (inhaled dose) and one or more responses elicited by the exposure to the specific pollutant. For human health evaluations, responses are health effects, e.g., eye irritations and restricted activity days. For agriculture, the responses are changes in crop yields.

Emergency Room Visits: Visits to emergency rooms by individuals in need of urgent or immediate treatment.

EPA (Environmental Protection Agency): The United States government agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

Episodic Model: A photochemical grid model that typically simulates air quality for a 3-5 day period, e.g., the CAMx Model used for the ozone attainment demonstration .

FIP (Federal Implementation Plan): In the absence of an approved State Implementation Plan (SIP), a plan prepared by the EPA which provides measures that non-attainment areas must take to meet the requirements of the Federal Clean Air Act.

Hedonic Prices: Hedonic prices are a method to compute the price of a good that is not traded in the market based on the price of a traded good that has the attribute of the non-traded good. Based on the amount of the attribute, the imputed price of the non-traded good is a fraction of the price of the traded good. For example, air quality is an attribute of real estate.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes. (Contrast with stationary sources.)

NAICS Code: The North American Industry Classification System (NAICS) has replaced the U.S. Standard Industrial Classification (SIC) system. NAICS was developed jointly by the U.S., Canada, and Mexico to provide new comparability in statistics about business activity across North America. Economic units that use like processes to produce goods or services are grouped together. NAICS reflects the structure of today's economy in the United States, Canada, and Mexico, including the emergence and growth of the service sector and new and advanced technologies. NAICS also provides for increased comparability with the International Standard Industrial Classification System (ISIC, Revision 3), developed and maintained by the United Nations.

Nitrogen Oxides (Oxides of Nitrogen, NO_x): A general term pertaining to compounds of nitric acid (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects.

Off-Road Mobile Sources: Mobile sources of air pollution (vehicles) which are not authorized to operate on streets and highways. Examples include trains, boats, aircraft, farm equipment, and earthmoving equipment.

On-Road Mobile Sources: Mobile sources of air pollution (vehicles) which are authorized to operate on streets and highways. Examples include passenger cars, trucks, and buses.

Ozone: A strong-smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface can cause numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone Precursors: Chemicals such as hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

PIC (Particle-in-Cell) Model: An air quality simulation model that is used to apportion sulfate and nitrate PM_{2.5} concentrations to their precursor emissions sources. The PIC model uses spatially and temporally resolved sources of NO_x and SO_x emissions, with meteorological, physical, and simplified chemical processes, to calculate PM_{2.5} contributions .

PM_{2.5} (Particulate Matter): Major class of air pollutants consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and mists. The size of the particles (2.5 microns or smaller, about 0.0004 inches or less) allows them to enter the air sacs (gas exchange region) deep in the lungs where they may get deposited and result in adverse health effects. PM_{2.5} also causes visibility reduction and is a criteria air pollutant.

PM_{2.5} Model: Modeling approaches required to assess contributions to primary and secondary PM_{2.5}. The primary PM_{2.5} source apportionment can be accomplished by receptor models and the secondary particles such as sulfate and nitrate can be apportioned to their precursors utilizing the Particle-In-Cell (PIC) dispersion model.

Premature Mortality: Death before the term duration of life expected.

Quantifiable Clean Air Benefits: Clean air is not a commodity exchanged in a market. The contingency valuation method or the hedonic pricing is often used to assess the monetary benefit associated with clean air. There are instances where association between an effect and clean air (cause) cannot be quantitatively established or is unknown, thus precluding the application of the contingency valuation method or the hedonic pricing. Quantifiable clean air benefits are those benefit categories where monetary values can be placed based on past literature.

REMI (Regional Economic Models, Inc.) Model: The REMI model is an economic and demographic forecasting and simulation model designed to examine the economic and demographic effects resulting from policy initiatives or external events in a local economy. For the socioeconomic analysis of the 2003 AQMP, the REMI EDF5-53 sector model for the 19 sub-regions within the counties of Los Angeles, Orange, Riverside, and San Bernardino is used.

Respiratory Hospital Admissions: Hospital admissions due to respiratory illness.

Restricted Activity Days: Days when activities are either fully or partially restricted due to illness, which include days spent in bed and days missed from work.

ROG (Reactive Organic Gas): A reactive chemical gas, composed of hydrocarbons, which may contribute to the formation of smog. Also sometimes referred to as Non-Methane Organic Compounds (NMOCs) or volatile organic compounds (VOCs).

SIC Code (Standard Industrial Classification Code): The SIC code is used to classify all establishment-based federal economic statistics by industry. The SIC code facilitates the comparability of establishment data in the U.S. economy. The classification covers the entire range of economic activities and defines industries in accordance with the composition and structure of the economy.

SIP (State Implementation Plan): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards (see AQMP).

Smog: A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

SO₂ (Sulfur Dioxide): A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major

sources of SO₂. SO₂ and other sulfur oxides contribute to the problem of acid deposition. SO₂ is a criteria pollutant.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants. (Contrast with mobile sources.)

VHT: Vehicle Hours Traveled.

VMT: Vehicle Miles Traveled.

Visibility: The distance that atmospheric conditions allow a person to see at a given time and location. Visibility reductions from air pollution are often due to the presence of sulfur and nitrogen oxides, as well as particulate matter.

VOCs (Volatile Organic Compounds): Hydrocarbon compounds which exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor. Some examples of VOCs are gasoline, alcohol, and the solvents used in paints.

Willingness to Pay (WTP): WTP is an approach to measuring monetary values of benefits received from non-market goods such as environmental quality. The methods used to arrive at a WTP value include surveys and hedonic price functions.